Antique Wireless Association of Southern Africa
Newsletter

227 June 2025

Geloso G4/223 Transmitter

This transmitter has been specially designed for CW (telegraphy) and AM 100 % modulated amateur transmissions.

Its singular features respect to the precedent G 222 transmitter, are frequency greater stability and the possibility of « break-in» manipulation with V.F.G. circuits always turned on.

A relative RF output power meter of new design is also provided in the antenna circuit, particularly facilitating RF output stage adjustment.

In addition to the above, the following features - already present in the earlier model G 222 - are worthy of consideration:

1) Quick and easy frequency range switching.

2) VFO type driving generator.

3) Tuned plate circuit of RF output stage.

4) Pi-section antenna coupling circuit, permitting a number of fitting facilities to match antenna impedance.

5) Quick switching from CW to AM operation, by means of a single switch.

ted modulation, controlled with built-in meter. It allows use of full available AF output power.

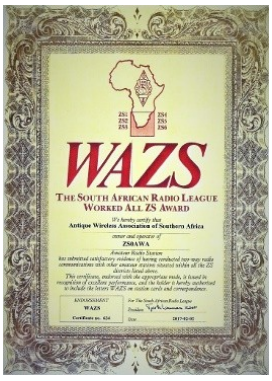
6) Two 807 tubes - push-pull connected AF modulator, permitting 100 % undistor-

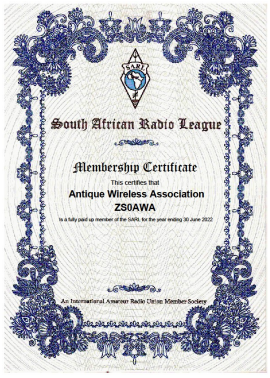
7) AF modulator pass-band particularly suited to speech transmission, thus ensuring maximum intelligibility even under the most adverse conditions.

8) Quick switching from transmission to reception by means of a single «RECEIV.TRANS.» switch, acting simultaneously on antenna and B + supply circuits of both transmitting and receiving sets. Operation of both units is immediate, because tube heating is always maintained,

9) Iso-wave performance facility, by shifting a single switch - while receiving - which turns on the VFO.

10) Metering features: plate current, output stage control grid current, modulation deepness, and relative antenna output power, on two different ranges, depending on antenna impedance.





Inside this issue:

AWA Committee:

* President—Chris ZS6GM
* Vice President—
* Technical Advisor—Rad ZS6RAD
* Secretary/PRO—Andy ZS6ADY
* KZN—Don ZS5DR
* WC—John ZS1WJ
* Historian— Louis ZS6SK
* Members—Renato ZS6REN Wally ZS6WLY

Visit our website: www.awasa.org.za

Chris's Musings

Another month comes around, so quickly these days! Earlier this month the SARL held its Centenary celebrations hosted by the Pretoria Amateur Radio Club who celebrate their 95th birthday.

The club chairman showed the history of the PARC with photos of the many people who contributed to our hobby over the years. Pretoria, Durban, Johannesburg, Port Elizabeth and Cape Town radio clubs and SARL affiliated societies were extremely active putting ZS on the map worldwide in the early 20th century. One of the features of amateur radio over the years was the close connection between radio amateurs and those developing leading edge radio and wireless equipment, systems and operating practice.

Many innovations have come out of amateur experiments. And many electrical and radio engineers involved with wireless technology have been radio amateurs; whichever came first does not matter.

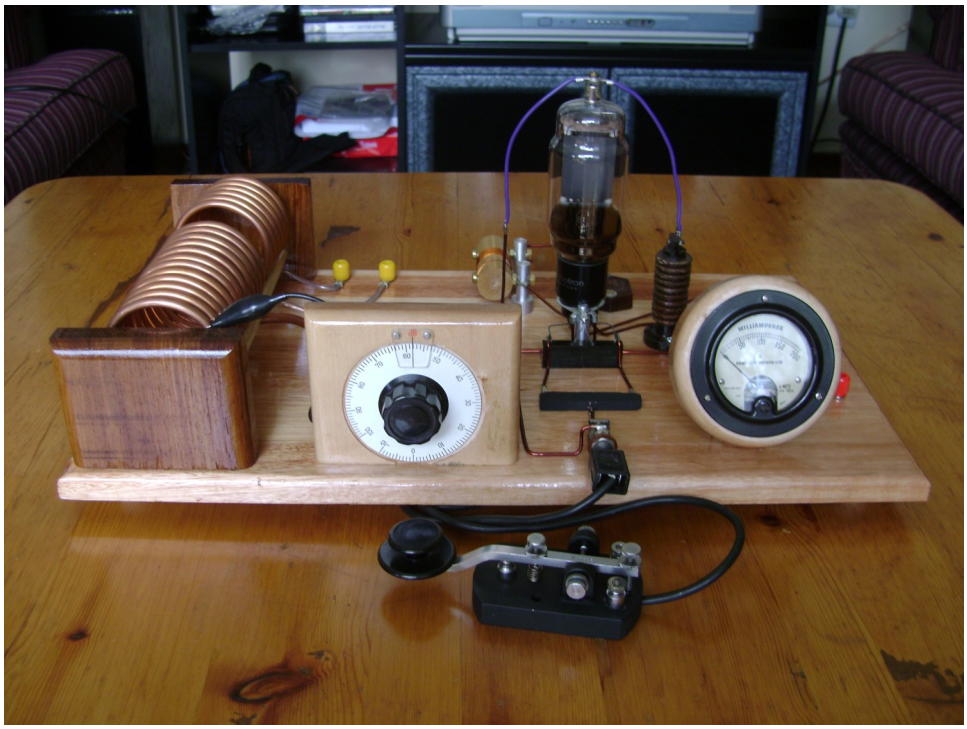
A recent AWA net topic was homebrew and the methods used to build circuits. They ranged from wood, ie. breadboards, to ugly wiring and so called dead bug construction to surface mount. To me, this shows that home construction is still alive and well and that the connection between amateur radio and the professional electronics world is alive and well.

What I don't understand is why we are shy to talk about it. We should be pointing out to the world, schools and our youngsters that the Tony Hancock caricature of the radio ham with an old timer sitting behind a radio talking nonsense to someone when a cellphone would do the job, is NOT what modern amateur radio is all about.

Think about WSPR, ultra low power worldwide communication. In fact so leading edge that the team looking for the downed Malaysian aircraft is analysing WSPR stored data in order to find the aircraft.

Yet, we the radio amateurs that developed and use this technology are given little or no credit. Don't you think it is time to make amateur radio a topic for discussion around the office, at the dinner table and at every opportunity?

A fine example of "Homebrew" by Tim ZS6IM below.



Reflections:

When I think of all the time, money and effort that people put into their hobbies, it strikes me that being a radio ham is probably one of the cheaper ones to be involved in.

Yes I understand that many of the new plug and play super duper all singing all dancing radios are worth more than an arm and a leg, one has to realise that there are many ways to skin a cat and the same thing applies to amateur radio.

With every new modern rig that is purchased, there is another second hand one going to be on the market. Well, with the exception of people like us who tend to hang on to them for 50 years. This in turn works it's way down the food chain until it gets to guys like me who are out there scraping the barrel to make sure that nothing goes to waste.

How many times I have been asked by people getting rid of late hubbies stock, "Can you really do something with this ? It must be nearly 50 years old".

That is when we just start getting warmed up and the mind starts to get all twisted with thoughts of all this valuable treasure ending up on a dump.

My biggest problem these days are the unscrupulous characters out there who see this as an opportunity to line their pockets with some fleece by asking exorbitant prices for some of the really good stuff.

What's even worse is that there are people who are willing to pay the prices, because the stock is getting less and less.

So when we really want to have that specimen up on a rack looking down at us, reminding us of the "Good ole days", we haul out the savings and put it all to a good cause.

Need I say that it takes either someone with no sense at all, or someone with a lot of backbone, to collect these old beauties that glow in the dark. Lets admit it, there is never really any return on investment with them.

So we do these things without really expecting anything in return, just the bragging rights to say that we are transmitting with a radio that was made just after Noah left the ark.

The joy of using these old rigs never seems to deteriorate and I always get a kick out of telling people that I am using a valve powered rig that was probably made before they were born. Then it is barefoot at 100w and they can't believe the audio and the copy from you when they are using the latest plug and play into a 1kw linear.

One of the things that amazes me too, is that when these same people see the old rigs we use, they are quite awe struck to see just how neat they actually look. I am sure, like me, many of you love to show off the collection of radio's, keys etc just to let people know that they still work and are just as good, if not better than a lot of the modern radios.

But then, technology has certainly played it's part in the modernisation of our radios. I can still remember looking at an FT707 and thinking what a nice looking rig it was and what it was capable of, yet today the radios are smaller, fancier and can do so much more.

Being a techno junkie, I still love all the modern stuff, but there is an attraction that valve radio has that surpasses the desire for technology.

Maybe it's because I was born in the fifties and grew up with a lot of technology changes through the years. I was fortunate enough to be involved in so much of the change that took place and made sure I never got left behind. I remember fondly the Phillips radiogram that had it's pride of place in our home and to which we would listen to "Squad Cars" or the BBC. Playing Mantovani records at 33rpm. The first Blauwpunkt car radios that had push button tuning.

What are memories for if we can't recall them ?

With this technical explosion of course things have become more expensive, or have they ? What was a pound worth in the late fifties compared to a Rand today ?

I often used to wonder why my grandmother would tell us stories of the pleasant memories she had from the days of few, when life was tough, and I guess it was all about nostalgia. We and they thrived on it.

So the next time you find a bargain radio at a boot sale, don't think abou the price of it, think about the history it carries with it. And if it still works, then make it work and let others now about the life it still has,

Always looking forward to hearing more of you on the air using those old radios.

Remember to get on the air with the pre net group on 7.125 and enjoy your bragging rights.

Look forward to hearing you all.

Best 73

Andy ZS6ADY

DRAKE 1-A SAVED FROM OBLIVION

By Paul ZS6PMS

Sometimes strange things happen in a radio amateurs live. In 2001, I was still in the Netherlands it was when I bought a Drake 1-A in the USA via eBay for a lot of money and sold it here in 2019 for little money after regretting it profoundly. That's how it always goes for me, you too? It was a drizzly day in the fall about 12 years ago when I decided to go to the PARC Flee Market against all odds.

On the way it started to rain cats and dogs and I arrived in Pretoria far too late. There was only one stallholder left. He had already cleared his table, but there was still one item left, a pitiful quite dusty looking Drake 1-A. "Is it in working order? The man had no idea, the receiver came from an estate he said. It appeared to me he was not even a radio HAM. "How much should it cost?" I asked. The man answered: "I have no idea, nobody wanted it". I quickly paid him R…

Arriving home on the farm I dumped the poor 1-A in the obscure dusty pests infested former dairy and forgot about it. I still had my very well working “American eBay 1-A” in the shack, you know.

In November last year I started to sell the remainder of my boatanchor collection. Since every cupboard in the house was bulging with radios next to the shack after the move to Vereeniging in 2015, the garage also had to be cleared out because there were many more there.

ZS6PMS Gazing at the glow in the dark

There she was (a radio is feminine) the forgotten 1-A among the mouse droppings, what a sad sight. Cleaning took a day and what emerged was not bad.

The copper cladded chassis shined like new and everything looked original. I mean not a single component was replaced. Carefully the variac was set in 40 volt steps to USA 120V mains voltage.

She greeted me with a lovely very soft mains hum before she had warmed up her valves.

After connecting an antenna stations rolled in on all bands, unbelievable! Checking on the bench showed the radio was still up to spec after her birth 67 years ago.

The question now is: How did Bob Drake come to make a radio that looks like a rural USA mailbox? We have to go back to 1956, the birth of the 1-A prototype.
In 1946, Bob had hired a fresh graduate of Cincinnati University for $0.87/hr. It was Milton A. “Buddy” Sullivan Jr, K8YDO (SK 2010). Milt would remain chief engineer at Drake until he left the company in 1984. So, “Buddy” was Bob’s first “real engineer” except himself.
During the first half of 1955 Art Collins came out with the first SSB receiver of the world the 75A4. A huge 22 valve 35 Lbs. monster with passband tuning and rejection notch (Q-mulitplier). So, Bob and “Buddy” must have studied the 75A4 in and out in order to achieve the design goals for the 1-A: Passband tuning, half of the number of valves and half the weight at one third of the prize.
After the prototype was finished a small series of 6 were built. We must now look at the size and financial wealth of R.L. Drake Co. in 1956. Bob did not dare to risk a production of his own and offered the 1-A to Hallicrafters, Hammerlund, National and RCA for production under license.

They all refused. What to do next? Bob Drake turned to an old friend, Francis R. Gibb, owner of Universal Service a retailer of amateur radio equipment in Columbus, Ohio. “Gibby,” as everyone called him, told Drake” “You build ‘m and I’ll take the first 100.” Then a second amateur radio supplier, Hyde “Rube” Rubel of the Srepco Co. in Dayton Ohio, said he would make a similar commitment.

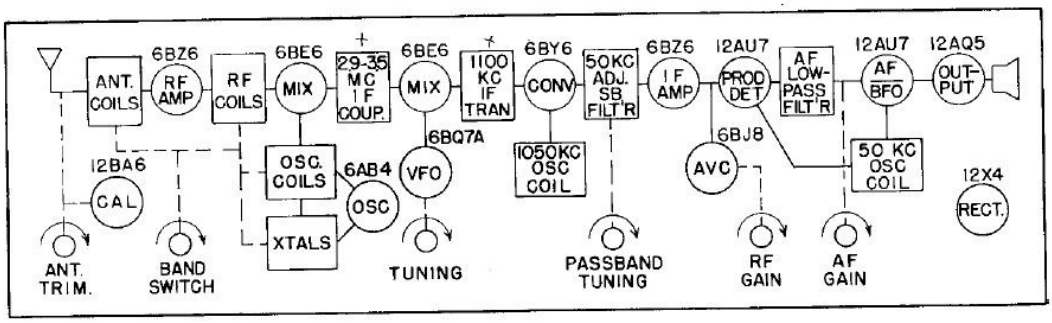
After the deal was struck, RCA decided it was interested. But Drake was a man of his word. He declined the belated offer. So, production of the A1 took off and she appeared on the market just before Christmas 1957 for $259.00. Still a very significant price and with inflation and exchange rate taken into account it now amounts to R 52,927.

Spartan-looking controls of the A1

Let us look at the controls. I think it can't be made any simpler. By turning the "ANTENNA TRIM" far to the left the 100 kHz calibrator is switched on. The main tuning is geared 10:1 when operating the front knob. The tuning scale is surprisingly accurate and even after switching on the receiver the drift is almost zero. The absolute highlight is the passband tuning and compared to the Collins 75A4 the latter works clumsily. However, there is no unwanted carrier suppression due to the lack of a Q-multiplier notch, as with the 75A4. This also means that the 1-A is completely unsuitable for CW reception in a crowded band. During the past weekend I listened to the CQ Worldwide CW contest and sometimes three strong stations appeared simultaneously in my passband with no possibility to separate them.

AM can only be received by going zero beat with the carrier with very poor results in terms of intelligibility.

CONCLUSION: She is an SSB receiver nothing more, nothing less



BLOCK DIAGRAM—MODEL 1-A SIDEBAND RECEIVER

The 1-A is a triple conversion receiver, using a 6BZ6 low-noise RF amplifier with fixed tuned plate and grid circuits. The 6BZ6 is a semi remote cut of pentode (variable μ) very well biased and fit for the job. The valve is also used in the IF Amp a job it is designed for.
After the 6BZ6 the input signals are fed to the 6BE6 and mixed to 2.9-3.5 MHz through broad-band over coupled tuned circuits. The 6BE6 is a heptode pentagrid valve. The problem with heptodes and hexodes is that these valves are noise factories and you do not want added noise in your front end.
The equivalent noise resistance [Raeq] of these valves is about >150 kΩ while a pentode mixer gives you about <10 kΩ. The Collins 75A4 also uses a heptode in the front end. It was the way to go then.
The signal is further mixed with the 4.0-4.6 MHz PTO to a fixed 2nd IF frequency of 1100 kHz.
The 3rd mixer down-converts the signal to 50 kHz, where selectivity is provided by a 4-section LC filter setting the passband.
The receiver uses a 12AU7 product detector/AF preamplifier, and a 12AQ5 audio output stage.

SUMMARY:

The question that remains is: did Bob Drake achieve his goals with the 1-A?
This question can be answered with yes and no. Certainly in view of the progressive design and the quality of the product the answer is a resounding yes. When it comes to the realization of the idea of a slim SSB receiver that could be placed next to a robust AM receiver to complement the advent of SSB the answer is no. Tragically only about 1100 1-A's were manufactured between 1957 and 1959. The remaining ones are greatly valued by collectors for their historical significance, rarity, and performance.
Did you ever operate a 1-A? You might know in order to reach the 30 dB attenuator in the antenna input you have to crawl over the receiver to reach the slide-switch on the back panel and I wonder if you can find it though, I never succeeded.

Winner of the Most-Useless-Feature Award

Cold neutralisation of 6JS6C in Yaesu FT-101

http://www.k4lmp.org/downloads/Cold_Neut.txt

The standard neutralization method used by FT-101 owners suffers from a couple of major drawbacks - the finals are producing RF (i.e. are `hot') and the method requires a lot of tweak and try. This results in a lengthy process during which the finals may get very hot, or may even be destroyed if they should go into oscillation and the operator is not quick on the OFF switch. The method described here is not new, but may be new to some FT-101 owners. It allows neutralization of the finals whilst they are `cold' (not actively producing RF). The operator may therefore take their time and there is no chance of the finals being damaged.

As pointed out, this method is not new. Please refer to an excellent website by Tom, W8JI (www.w8ji.com/neutralizing__amplifier.htm) in which he discusses the need for neutralization and ways it may be achieved. The cold neutralization method works as it takes advantage of the fact that inter-electrode capacitances are present whether the device is `hot' or `cold'.

In a `cold' device, the grid-plate capacitance acts as a path through the circuit, and so a proportion of the drive signal will appear at the output. The purpose of neutralization is to couple an amount of signal back to the driver equal in amplitude and in antiphase to the finals' grid-plate coupled signal. So, the net effect should be to cancel out any signal feed through. In practice, cancellation will not be complete, but it is possible to adjust for minimum feed through.

In the FT-101, `cold neutralization' is achieved as follows:

1. Make sure that the transceiver has the PA compartment covers fitted (top and bottom).

2. Switch on the radio. Tune the radio as normal for maximum transmitter output (into a 50-ohm dummy load) at 29.0 MHz. Switch off the radio.

3. Remove the "Accessory" plug from the rear panel. This opens the heaters in the finals, but keeps the heater active in the driver.

4. Connect the transceiver RF output (ANT connector) to a detector of some sort. (I use an oscilloscope with a BNC "T" piece adaptor, the third arm of which has a 50-ohm termination directly mounted to it. A standard communications receiver will probably be too sensitive, may suffer damage, and may not give accurate results).

5. Switch on the transceiver, and switch on the Heaters. Make sure that the finals are not lit, but that the driver is!

6. Set frequency to 29.0 MHz and set the mode switch to TUNE.

7. Set the carrier level control to about 3 and set the MOX/PTT/VOX switch to MOX.

8. Adjust the Preselector, Plate and Load controls for MAXIMUM signal on the detector (scope). Adjust the carrier level as needed to get a suitable level.

9. Adjust the neutralization capacitor TC27 (using a non-metallic trimming tool) for MINIMUM signal on the detector.

10. Re-peak the Plate and Load controls for MAXIMUM and re-adjust TC27 for MINIMUM. Repeat until no further reduction in signal at the detector can be achieved.

11. Set the MOX/PTT/VOX switch to PTT, the heater switch to off and the radio power switch to off. Remove the detector from the ANT connector and re-fit the Accessory plug.

You should now find that maximum RF output coincides with the dip in Ic, or is very close to it.

Detector notes.

The choice of `detector' is entirely up to you. There may be up to 1-Watt RF present during this process, so you will need to act accordingly. As stated above, a communications received is probably not a good idea. I found that a lot of attenuation was required between the FT-101 ANT connector and the radios' antenna terminal and that RF was leaking around the attenuators making accurate adjustment impossible. As an alternative to an oscilloscope, a simple detector (perhaps following a 50-ohm attenuator) using a diode and multimeter should be adequate. For making adjustments, an analogue meter is preferable to a digital one.

Results of the SSB QSO Party May 2025

Name:	Points:	Radio
Helge ZS6HB	188	Collins KWM2-A
Daniel ZS5JR	163	Yaesu FT200
Nico ZS4N	153	Yaesu FT101zd
Phillip ZS6PVT	69	Yaesu FT902
Danie ZS6DPS	69	Yaesu FT902
Kobus ZS6KBS	25	Kenwood TS120
Dylan ZS2D	20	Yaesu FT75
Dave ZR6DM	16	Vertex 1700
Gert ZR6GRT	15	IC7300
Pierre ZS6PJH	11	Kenwood TS590
Andy ZS6ADY/ZS0AWA	112	Yaesu FT102

There was a total of 83 participant's with 11 logs being submitted and a large variation of radios from all valve to modern solid state.

Our thanks to all who took the time to participate.

Look out for a change in categories for the October QSO Party which will allow more participation and allow one to compete in a category of radio of your choice.

SARL AGM and Flea Market 2025

Some photo's of the AWA display and our table at the flea market.
The weather and company was outstanding and we enjoyed seeing so many faces again.

Thanks to the Pretoria Club for sponsoring the event.

AWA Tent

AWA Tent 2

Drake T4X Tx, Drake R4C Rx, Heathkit SB 102 Transceiverr with accessories. Hallicrafters S32 Receiver


Keys and Microphones


Radiola Model III and Marconi RB 10

Little Giant 4 tube TRF and Pilot 63B

CONTACT US:

WA/Telegram +27824484368
email: andyzs6ady@vodamail.co.za
www.awasa.org.za

Antique Wireless Association of Southern Africa

Mission Statement

Our aim is to facilitate, generate and maintain an interest in the location, acquisition, repair and use of yesterdays radio's and associated equipment. To encourage all like minded amateurs to do the same thus ensuring the maintenance and preservation of our amateur heritage.

Membership of this group is free and by association. Join by logging in to our website.

Get your backdated issues at
http://www.awasa.org.za/index.php/newsletters

Visit our website:
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Notices:

Net Times and Frequencies (SAST):
Saturday 07:00 (05:00 UTC) —Western Cape SSB Net —7.140; Every afternoon during the week from 17:00—7.140
Saturday 08:30 (06:30 UTC)— National SSB Net— 7.125;
Echolink—ZS0AWA-L;
ZS6STN Sandton repeater—145.700
Kempton Park Repeater—145.6625
Relay on 10.125 and 14.135 (Try all and see what suits you)
Saturday 14:00 (12:00 UTC)— CW Net—7025; 14:20 10.115/14125

AWASA Telegram group:

Should you want to get on the AWA Telegram group where a lot of technical discussion takes place, send a message to Andy ZS6ADY asking to be placed on the group. This is a no-Nonsense group, only for AWA business. You must download the Telegram App first. …..+27824484368

SAIEE Open Day:

This Saturday, 07 June from around 10h30 at the SAIEE in Observatory. 18a Gill Street.
Come along for a pleasant time at the museum, nostalgic displays of our amateur heritage.
Operate the museum station. ZS6IEE.
Enjoy good company.

Hope to see you there.